

Getting the Chaff Out

Chaffy grass seed is usually a mix of stems, leaves, chaff, lint, fuzz, and other trash. The tangle that it forms complicates the uniform dispensing and placement of seed during planting. But cleaning and sorting chaffy seed without damaging it is a costly process. It requires use of a hammer mill to chop or break up stems, followed by cleaning treatments to remove the extraneous material.

Now, a three-phase apparatus has been developed to meter, precondition, and classify seed. It's effective even with hard-to-process chaffy seed. An auger draws in the unprocessed seed and transfers it to a preconditioning unit that removes the extra materials. Airflow blows off the unwanted matter, leaving the seeds behind. The device then separates the seeds into quality classes based on their densities. A patent has been issued, and there's hope that a cooperative research and development agreement will lead to commercial production and use of the Woodward Chaffy Seed Classifier 2000. *Phillip L. Sims, USDA-ARS Rangeland and Pasture Research Unit, Woodward, Oklahoma; phone (580) 256-7449, e-mail psims@spa.ars.usda.gov.*

Mugwort Extract Curtails Snails

A natural ingredient in the oil of a variant of the weed known as mugwort could lessen the woes of U.S. catfish farmers and Asian rice growers. Vulgarone B has proved just as effective—and faster acting—than the current treatment against golden apple snails. These hungry pests make quick work of rice fields, feeding on the base of paddy seedlings and on plant stems and leaves. They have caused great losses to rice farmers in Southeast Asia in the past two decades.

Vulgarone B has also controlled ram's horn snails. They serve as intermediate hosts for a parasitic flatworm, *Bolbophorus confusus*, that has plagued U.S. catfish farmers, killing smaller fish and stunting those that survive. Vulgarone B can be

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Ram's horn snails can carry a parasitic flatworm that attacks catfish. Now a natural ingredient in a weed called mugwort can be applied to catfish ponds to control these aquatic pests.

sprayed, placed in attractant traps, or applied directly to pond or paddy water. The compound has also shown activity against fungi that cause anthracnose disease in strawberries. Testing on mammals has yet to be done. *Kumudini M. Meepagala, USDA-ARS Natural Products Utilization Research Laboratory, Oxford, Mississippi; phone (662) 915-1030, e-mail kmeepagala@ars.usda.gov.*

Tractors and No-Till

Soil compaction is not a good thing. It can interfere with roots' normal growth, restrict infiltration of water, and increase runoff and soil erosion. Driving heavy machinery through conventional-till and no-till fields causes soil compaction under the tires. To see whether there's a difference between soil compaction on tilled and no-till soils, researchers attached sensors to tractor tire tread and compared the effects of tire pressure (that is, the pressure or force exerted on the

field by the tire) on both types of fields. They found tire pressure to be more uniform on tilled soils than on untilled clay soils. As for tractive efficiency (the measure of efficiency with which a tire converts power applied to the wheel to actual work done) it proved to be the same on tilled and no-till soils. Since a tractor's fuel efficiency increases with its tractive efficiency, fuel consumption for a particular use of a tractor on tilled and no-till soils would be about the same. *Thomas R. Way, USDA-ARS National Soil Dynamics Laboratory, Auburn, Alabama; phone (334) 844-4753, e-mail tway@ars.usda.gov.*

Water Turkeys Foiled by Twine

Researchers have tested a low-tech solution to the problem of poaching by double-crested cormorants, often called water turkeys. These migratory diving birds winter in the Delta region, where they voraciously feed on channel catfish fingerlings and any other fish they can swallow. Each one eats up to a pound and a half a day.

Seeking an inexpensive, easily set up, environmentally benign way to discourage this predation, researchers installed twine barriers across test ponds. It took about 3 hours for a three-person team to string a 15-acre pond, placing posts at 100-foot intervals, stretching the twine across the width of the pond, and maintaining the string 3 feet above the water in the middle of it.

Using four ponds at each of six privately owned catfish farms, only 2.3 cormorants per hour, on average, landed on ponds where the twine was used, compared to 10.6 birds on unstrung ponds. Seeing fewer birds on twined ponds apparently discouraged others from attempting to land. *Andrew A. Radomski, USDA-ARS Harry K. Dupree Stuttgart National Aquaculture Research Center, Stuttgart, Arkansas; phone (870) 673-4483, e-mail aradomski@spa.ars.usda.gov.*